

Claims

1. Method for operating a mobile radio system with at least a first radio cell (C1) and a plurality of radio cells (C2 to C7; CI to CXVII) adjacent to the first radio cell, each covered by a base station (BS1, BS2, BS3 ...; BSI, BSII ...), in which
- 5 - a sub-group (C2, C6, C7; P2 to P6) of the adjacent radio cells (C2 to C7; CI to CXVII) is determined as a function of the position of a mobile station (MS) within the first radio cell (C1)
- 10 - and the mobile station (MS) then implements measurements of a quality parameter of signals (S2, S6, S7) from the base stations of just this sub-group (C2, C6, C7; P2 to P6) of the adjacent radio cells (C2 to C7; CI to CXVII).
- 15
2. Method according to Claim 1, in which before implementation of the measurements for different positions of mobile stations within the first radio cell (C1), another sub-group of the adjacent radio cells (C2 to C7; CI to CXVII) is determined in each instance for the measurements to be implemented.
- 20
3. Method according to one of the preceding Claims, in which the base station (BS) of the first radio cell (C1) transmits sub-group information (PI, PI') to the mobile station (MS), which is used to determine the sub-group (C2, C6, C7; P2 to P6) of the adjacent radio cells (C2 to C7; CI to CXVII).
- 25
- 30
4. Method according to Claim 3, in which
- the sub-group information (PI, PI') specifies another sub-group of the adjacent radio cells (C2 to C7; CI to CXVII) in

each instance for different possible positions (M) of mobile stations in the first radio cell (C1),

- the mobile station (MS) determines its actual position within the first radio cell (C1)

- 5 - and the mobile station (MS) identifies the sub-group (C2, C6, C7; P2 to P6) from the determined position and the sub-group information (PI, PI').

5. Method according to Claim 3, in which

- 10 - the actual position of the mobile station (MS) is determined
- and the sub-group information (PI, PI') is generated taking into account the determined position and transmitted from the base station (BS1) of the first radio cell (C1) to the mobile station (MS).

15

6. Method according to Claim 3, in which

the base station (BS1) of the first radio cell (C1) uses a directional antenna to transmit the sub-group information (PI, PI').

20

7. Method according to one of the preceding Claims, in which

- two groups (C1 to C7, CI to CXVII) of respectively adjacent radio cells are overlaid locally on each other in the mobile radio system, the first radio cell (C1) belonging to the first
25 group (C1 to C7) and the sub-group (P2 to P6) of the radio cells adjacent thereto belonging to the second group (CI to CXVII),

- the mobile station (MS) implements measurements of a quality parameter of signals from the base stations of at least some
30 of the immediately adjacent radio cells (C2 to C7) of the first group (C1 to C7) in the first radio cell (C1),
- it is ascertained for which of these adjacent radio cells (C2 to C7) of the first group (C1 to C7) the best measurement

results result for the current position of the mobile station (MS),

- the sub-group (P2 to P6) of the radio cells of the second group (CI to CXVII) is determined from the radio cells of the first group (C1 to C7) with the best measurement results

- and the mobile station implements measurements of the quality parameter of the signals from the base stations just of the sub-group (P2 to P6) of the adjacent radio cells of the second group (CI to CXVII).

10

8. Method according to Claim 7, in which the radio cells of the second group (CI to CXVII) are smaller than the radio cells of the first group (C1 to C7).

15

9. Method according to one of Claims 7 or 8, in which the radio cells of the two groups (C1 to C7, CI to CXVII) are operated in different frequency ranges.

10. Mobile radio system

20

- with at least a first radio cell (C1) and a plurality of radio cells (C2 to C7; CI to CXVII) adjacent to the first radio cell, each covered by a base station (BS1, BS2, BS3 ...; BSI, BSII ...),

- with at least one mobile station (MS),

25

- with a device (CU) for determining a sub-group (C2, C6, C7; P2 to P6) of the adjacent radio cells (C2 to C7; CI to CXVII) as a function of the position of a mobile station (MS) within the first radio cell (C1)

- in which the mobile station (MS) has a measuring unit (MU)

30

to implement measurements of a quality parameter of signals (S2, S6, S7) from the base stations of just this sub-group (C2, C6, C7; P2 to P6) of the adjacent radio cells (C2 to C7;

CI to CXVII).

11. Mobile station (MS) for a mobile radio system having at least a first radio cell (C1) and a plurality of radio cells (C2 to C7; CI to CXVII) adjacent to the first radio cell, each covered by a base station (BS1, BS2, BS3 ...; BSI, BSII ...) and having a device (CU) for determining a sub-group (C2, C6, C7; P2 to P6) of the adjacent radio cells (C2 to C7; CI to CXVII) as a function of the position of a mobile station (MS) within the first radio cell (C1), with a measuring unit (MU) to implement measurements of a quality parameter of signals (S2, S6, S7) from the base stations of just this sub-group (C2, C6, C7; P2 to P6) of the adjacent radio cells (C2 to C7; CI to CXVII).

12. Device (CU) for determining a sub-group (C2, C6, C7; P2 to P6) of adjacent radio cells (C2 to C7; CI to CXVII) of a first radio cell (C1) of a mobile radio system, in which the radio cells are each covered by a base station (BS1, BS2, BS3 ...; BSI, BSII ...), with means for determining a sub-group for which a mobile station (MS) is to implement measurements of a quality parameter of signals (S2, S6, S7) from the base stations, as a function of the position of a mobile station (MS) within the first radio cell (C1).